

PE NUMBER: 0603434F

UNCLASSIFIED

PE TITLE: National Polar-orbiting Operational Environmental Satellite System (NPOESS) (Space)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999		
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603434F National Polar-orbiting Operational Environmental Satellite System (NPOESS) (Space)				PROJECT 4056		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
4056 National Polar-orbiting Operational Env. Sat. Syst.	31,221	64,438	80,137	113,234	179,825	230,270	332,925	312,524	450,050	1,844,701
Quantity of RDT&E Articles	0	0	0	0	1*	0	0	0	1*	2*

* Initiation of RDT&E spacecraft bus build. ; + Total cost includes approximately \$52.1 M in funds prior to FY98.

(U) A. Mission Description
The National Performance Review (NPR) and subsequent Presidential Decision Directive/NSTC-2 (May 1994) direct the Departments of Defense (DoD) and Commerce (DOC) and the National Aeronautics and Space Administration to establish a converged national weather satellite program. The converged program, the National Polar-orbiting Operational Environmental Satellite System (NPOESS), will combine the follow-on to DoD's Defense Meteorological Satellite Program (DMSP) and the DOC's Polar-orbiting Operational Environmental Satellite (POES) program. An integrated tri-agency program office was established on 1 Oct 94 to manage the acquisition and operations of the converged system. NPOESS will provide operational military commanders and civilian leaders timely, quality weather information to effectively employ weapon systems and protect national resources. The converged program will be the nation's single source of global weather data for operational DoD and DOC use. It will provide visible and infrared cloud cover imagery and other meteorological, oceanographic, and solar-geophysical information. At least two satellites will be required in sun synchronous 450 nm polar orbit at all times (sun synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). The European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) will provide a third satellite, which with the NPOESS satellites, will comprise the Joint Polar System. NPOESS successfully completed Milestone I on 17 March 1997. The NPOESS Executive Committee (EXCOM) has restructured the program twice since the Milestone I decision. The combined result of the EXCOM's decisions has delayed the availability of the first NPOESS satellites from January 2007 to July 2008. The first satellite will be available in time to fulfill the requirement to back-up the last of the DMSP or POES launches, whichever comes first. Both the DoD and DOC provide funding to the NPOESS Integrated Program Office (IPO).

(U) FY 1998 (\$ in Thousands):

– (U) \$ 553	Continued to support Program Definition and Risk Reduction efforts.
– (U) \$ 3,000	Continued system architecture studies.
– (U) \$ 4,530	Continued government-led risk reduction and technology development efforts.
– (U) \$ 23,138	Continued critical sensor/algorithm development efforts and design for risk reduction missions.
– (U) \$ 31,221	Total

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<p><u>(U) FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> – (U) \$ 560 Continue to support Program Definition and Risk Reduction efforts. – (U) \$ 4,500 Complete system architecture studies. – (U) \$ 4,250 Continue government-led risk reduction and technology development efforts. – (U) \$ 53,105 Continue critical sensor/algorithm development efforts and design/fabrication for risk reduction missions. – (U) \$ 2,023 Identified as a source for SBIR – (U) \$ 64,438 Total <p><u>(U) FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> – (U) \$ 600 Continue to support Program Definition and Risk Reduction efforts. – (U) \$ 4,000 Continue government-led risk reduction and technology development efforts. – (U) \$ 4,900 Continue system architecture studies. – (U) \$ 70,637 Continue critical sensor/algorithm development efforts and design/fabrication for risk reduction missions. – (U) \$ 80,137 Total <p><u>(U) FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> – (U) \$ 650 Continue to support Program Definition and Risk Reduction efforts. – (U) \$ 900 Continue government-led risk reduction and technology development efforts. – (U) \$ 16,200 Initiate system definition contracts. – (U) \$ 95,484 Continue critical sensor development efforts and design/fabrication for risk reduction missions. – (U) \$113,234 Total <p><u>(U) B. Budget Activity Justification:</u> This PE is in Budget Activity 4 (Demonstration and Validation) because it currently supports sensor and satellite bus development.</p>		
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(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 1999 PB)	31,438	64,732	95,646	132,260	1,884,336
(U) Appropriated Value	34,004	64,732			
(U) Adjustments to Appropriated Value					
a. Cong Gen Reductions	-1,929	-294			-2,223
b. SBIR	-641				-2,664
c. Omnibus or Other Above Threshold Reprogram	-213				-213
d. Below Threshold Reprogramming					
(U) Adjustments to Budget Years Since FY 1999 PB			-15,509	-19,026	-34,535
(U) Current Budget Submit/FY 2000 PB	31,221	64,438	80,137	113,234	1,844,701
(U) Significant Program Changes:					
Funding: FY1999: \$2,023 identified as a source for SBIR.					
FY2000 and FY2001 funding adjustments are a result of program rebaselining by NPOESS EXCOM.					
Schedule: Delayed system development and first satellite availability by 12 months from July 2007 to July 2008. Also delayed selected sensor developments.					
Technical: Pursuing alternate risk reduction efforts in lieu of civil POES N' modifications for on-orbit testing of new NPOESS sensors. Most promising alternative involves joint IPO/NASA project.					

(U) **D. Other Program Funding Summary (\$ in Thousands)**

Not Applicable.

Related RDT&E:

(U) PE #305160F, Defense Meteorological Satellite Program (DMSP)

(U) PE #305160N, DMSP (provides funds for the development of Navy unique sensors)

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<p>(U) E. <u>Acquisition Strategy</u> The guiding tenets for NPOESS acquisition include accomplishing substantial risk reduction with a focus on payload development, accelerating user satisfaction, deferring major system decisions as long as reasonable, and protecting maximum flexibility to ensure the best overall system design. The program pursues a significant investment in the development and on-orbit testing of selected payload sensors while deferring individual sensor selections among competing international, NASA, military, and industry alternatives to assess and determine the optimum technical performance potential of each candidate sensor. Overall system prime contractor selection is being deferred to minimize system level preliminary costs, allow sensor complement maturation, and delay the commitment to full system acquisition until approximately seven years before the first satellite need date.</p>																																																																																																																																		
<p>(U) F. <u>Schedule Profile</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 1998</u></th> <th colspan="4"><u>FY 1999</u></th> <th colspan="4"><u>FY 2000</u></th> <th colspan="4"><u>FY 2001</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Program Restructured</td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Program Rebaselined</td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Competitive Sensor Development Contracts Downselected</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Complete System Architecture Studies</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Competitively Award Multiple NPOESS System Definition Contracts</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> </tr> </tbody> </table> <p>* = Completed event X = Planned event</p>													<u>FY 1998</u>				<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	(U) Program Restructured	*																(U) Program Rebaselined					*												(U) Competitive Sensor Development Contracts Downselected						X	X					X	X				(U) Complete System Architecture Studies												X					(U) Competitively Award Multiple NPOESS System Definition Contracts														X		
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 1999		
BUDGET ACTIVITY 4 - Demonstration and Validation					PE NUMBER AND TITLE 0603434F National Polar-orbiting Operational Environmental Satellite System (NPOESS) (Space)					PROJECT 4056	
(U) A. <u>Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	System Architecture Studies/Definition				3,000	4,500	4,900	16,200			
(U)	Government Led Risk Reduction/ Technology efforts				4,530	4,250	4,000	900			
(U)	Sensor/Aloritm Development and Design/Fabrication for Risk Reduction Missions/Program Support				23,691	53,665	71,237	96,134			
(U)	Identified as a source for SBIR					2,023					
(U)	Total				31,221	64,438	80,137	113,234			
(U) B. <u>Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
Performing Organizations:											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC*	Project Office EAC*	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR							2,023				
<u>Product Development Organizations</u>											
Syst. Arch. Studies	C/CPFF	Sep 96	22,220	22,220	9,820	3,000	4,500	4,900	0	0	22,220
Multiple System	TBD	1QFY01							16,200	6,700	22,900
Def Contracts- Hughes Space/Com, Lock/Mart, TRW											
Lockheed	C/CPAF	2QFY95	Comp	Comp	4,489	0	0	0	0	0	4,489
Raytheon	CPFF	Jul 97	22,407	22,407	1,402	7,005	9,000	5,000	0	0	22,407
Ball Aerospace	CPFF	Jul 97	26,733	26,733	1,402	2,096	9,235	14,000	0	0	26,733
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE	
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
4 - Demonstration and Validation					0603434F National Polar-orbiting Operational Environmental Satellite System (NPOESS) (Space)					4056	
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC*	Project Office EAC*	Total Prior to FY 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
ITT Aerospace	CPFF	Jul 97	22,407	22,407	1,402	7,005	9,000	5,000	0	0	22,407
Hughes Space and Communications	CPFF	Jul 97	24,774	24,774	701	1,373	8,700	14,000	0	0	24,774
Orbital Sciences	CPFF	Jul 97	2,425	2,425	702	723	1,000	0	0	0	2,425
SAAB Ericsson	FFP	Jul 97	2,386	2,386	701	1,685	0	0	0	0	2,386
Other PDRR & Follow-on efforts (Sensor Development Contracts awarded)	MISC	Various	TBD	TBD	1,735	3,251	16,170	32,637	95,484	1,486,829	1,636,106
Gov't Led Studies	Gov. Orgs.	MISC.	32,002	31,002	17,322	4,530	4,250	4,000	900	0	31,002
<u>Support and Management Organizations</u>											
Integrated Program Office (IPO) Support	Various	Various	N/A	N/A	12,419	553	560	600	650	12,070	26,852
<u>Test and Evaluation Organizations</u>											
TBD										TBD	TBD
Government Furnished Property:											
Not Applicable.											

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